



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,796	07/31/2001	Jon C. Schaeffer	839-856	9520

30024 7590 05/12/2003

NIXON & VANDERHYE P.C./G.E.
1100 N. GLEBE RD.
SUITE 800
ARLINGTON, VA 22201

EXAMINER

MCNEIL, JENNIFER C

ART UNIT	PAPER NUMBER
----------	--------------

1775

DATE MAILED: 05/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/917,796

Applicant(s)

SCHAEFFER ET AL.

Examiner

Jennifer McNeil

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1775

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 28, 2003 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 has been amended to recite a coating consisting of less than 6 weight % yttria. This encompasses a value of zero, or no yttria present. Does applicant intend this value to be claimed? Please clarify.

Claim 9 also refers to a bond coating of MCrAlY. Claim 11 (dependant from claim 9) refers to the bond coating be chosen from a diffusion aluminide or a platinum aluminide. These compositions are not recognized as being encompassed by MCrAlY. An MCrAlY coating is recognized in the art as being an overlay coating, not a diffusion aluminide, or a platinum aluminide. Please clarify the content of the bond coating.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9, 10, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Nissley et al (US 5,780,171). Nissley teaches a gas turbine engine component with a thermal barrier coating thereon. The substrate of the component is a superalloy material, and the coating comprises a bond coat, and a ceramic coating. The ceramic coating comprises zirconia that is partially stabilized with about 6 to about 20 wt% yttria. The ceramic coating is characterized by a plurality of vertical microcracks. The bond coat comprises an MCrAlY layer, and may have a thickness of 5-10 mils (0.005-0.01 inches).

The term “about 6” is considered to encompass “less than 6”, in that “about” is considered to include values above and below the referenced value.

Regarding claim 10, the vertically cracked zirconia layer has a thickness of 5-15 mils.

Regarding claim 12, as stated above, the zirconia is partially stabilized by yttria.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nissley et al (US 5,780,171). Nissley teaches a thermal barrier coating for a turbine engine component as discussed

Art Unit: 1775

above. Nissley teaches a range of yttria as about 6 to about 20 wt%. Nissley does not include ranges lower than "about 6", however, this is considered to overlap with applicant's range of "less than 6 wt%". It would have been obvious to one of ordinary skill in the art at the time of the invention to have selected the overlapping portion of the ranges disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, (*In re Malagari*, 182 USPQ 549).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nissley et al (US 5,780,171) in view of Bruce (US 6,352,788). Nissley teaches a thermal barrier coating comprising a ceramic layer on a superalloy substrate, and a metallic bond coat between the ceramic coating and the substrate. Nissley teaches that the bond coat comprises MCrAlY, but does not specifically teach alternative compositions that may be used. Bruce teaches a thermal barrier coating with a metallic bond coat between a substrate and a ceramic coating. Bruce teaches that it is typical for the bond coat to be a diffusion aluminide, or a MCrAlY coating. These bond coatings are oxidation-resistant and form a protective alumina scale on their surfaces (col. 3, lines 20-37). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a diffusion aluminide bond coating in place of the MCrAlY coating of Nissley, to provide a coating that is oxidation-resistant, and is considered to an equivalent in the art.

Response to Arguments

Applicant's arguments with respect to claims 9-12 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments and amendments in Paper No. 11, March 31, 2003, have overcome the previous prior art rejections of record.

Art Unit: 1775

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer McNeil whose telephone number is 703-305-0553. The examiner can normally be reached on Monday through Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 703-308-3822. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



JCM
May 8, 2003

Jennifer McNeil
Examiner
Art Unit 1775